

CLAIMS

1. A modified EU-1 zeolite comprising silicon and an element T selected from the group formed by Al, Fe, Ga and B, in which at least a portion of elements T have been removed, in which modified zeolite the global atomic ratio Si/T is higher than that of the starting zeolite, the difference being at least 10% of the Si/T ratio of the starting zeolite.

2. A zeolite according to claim 1, in which Si/T is at least 20.

3. A zeolite according to claim 1, in which Si/T is over 60.

4. A zeolite according to any one of the preceding claims, in which Si/T is at most 600.

5. A zeolite according to any one of the preceding claims, in which Si/T is at most 300.

6. A zeolite according to any one of the preceding claims, in which T is aluminium (Al).

7. A process for preparing a zeolite according to any one of the preceding claims, by treating a EU-1 zeolite obtained by synthesis using at least one solution of an acid.

8. A process for preparing a zeolite according to any one of claims 1 to 6, using at least one heat treatment of a EU-1 zeolite obtained by synthesis followed by at least one treatment with a solution of an acid.

9. A process for preparing a zeolite according to any one of claims 1 to 6, in which the EU-1 zeolite obtained by synthesis is dealuminated by at least one heat treatment followed by at least one treatment using a chemical dealuminating compound such as ammonium hexafluorosilicate, silicon tetrachloride, or ethylenediaminetetra-acetic acid, including its sodium and disodium form.

10. A process for preparing a zeolite according to any one of claims 1 to 6, in which the EU-1 zeolite obtained by synthesis is dealuminated by at least one treatment with a chemical dealuminating compound such as ammonium hexafluorosilicate, silicon tetrachloride, or ethylenediaminetetra-acetic acid, including its sodium and disodium form.

11. A catalyst comprising EU-1 zeolite according to any one of claims 1 to 6, or an EU-1 zeolite obtained by the preparation process of any one of claims 7 to 10.

12. A catalyst according to claim 11, comprising at least one matrix and 0.5% to 99.5% by weight of EU-1 zeolite with respect to the matrix + zeolite mixture.

13. A catalyst according to claim 11 or claim 12, further comprising at least one hydro-dehydrogenating element.

14. A catalyst according to claim 13, in which the hydro-dehydrogenating element is a noble group VIII element.

15. A catalyst according to claim 13, in which the hydro-dehydrogenating element is a combination of at least one group VI metal or compound and at least one non noble group VIII metal or compound.

16. A catalyst according to claim 15, containing phosphorous.

17. A catalyst according to any one of claims 13 to 16, in which the hydro-dehydrogenating element is niobium and/or rhenium.

18. Use of a catalyst according to any one of claims 11 to 17, for converting hydrocarbons.

19. A process for improving the pour point of a feed comprising paraffins containing more than 10 carbon atoms, in which process the feed to be treated is brought into contact with a catalyst based on EU-1 zeolite, at least partially in its acid form, and at least one hydro-dehydrogenating

element, at a temperature which is in the range 170°C to 500°C, a pressure in the range 1 to 250 bar and at an hourly space velocity in the range 0.05 to 100 h⁻¹, in the presence of hydrogen in a proportion of 50 to 2000 l/l of feed.

20. A process according to claim 19, in which the hydro-dehydrogenating element is a noble group VIII element.

21. A process according to claim 19, in which the hydro-dehydrogenating element is a combination of at least one group VI metal or compound and at least one non noble group VIII metal or compound.

10 22. A process according to claim 21, in which the catalyst contains phosphorous.

23. A process according to any one of claims 19 to 22, in which the catalyst contains a matrix and 0.5% to 99.9% by weight of EU-1 zeolite with respect to the matrix + zeolite mixture.

15 24. A process according to claim 19, using a catalyst according to any one of claims 11 to 17.

25. A process according to any one of claims 19 to 24, in which the initial boiling point of the feed is over 175°C.

26. A process according to any one of claims 19 to 24, in which the initial boiling point of the feed is over 280°C.

20 27. A process according to any one of claims 19 to 24, in which the initial boiling point of the feed is over 380°C.

28. A process according to any one of claims 19 to 24, in which the feed comprises paraffins containing 15 to 50 carbon atoms.

25 29. A process according to any one of claims 19 to 24, in which the feed contains paraffins containing 15 to 40 carbon atoms.

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A process according to any one of claims 19 to 29, in which the compound to be treated is present in a hydrocarbon feed selected from the group formed by middle distillates, gas oils, vacuum residues, hydrocracking residues, paraffins from the Fischer-Tropsch process, synthesised oils, gas oil cuts and FCC middle distillates, oils, and polyalphaolefins.

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